REMARKS

Claims 1-17 and 22-26 are pending

Claims 16, 17 and 22-24 are withdrawn.

Claims 1-15, 25 and 26 are rejected.

Claim 15 is cancelled.

Claims 5 and 14 have been amended.

Polzin Alone is not a Prior Art Reference

The Examiner has cited to U.S. Published Patent Application 2004/0230718 to Polzin et al. Polzin was filed on May 10, 2004, based on provisional patent application No. 60/470,078, filed on May 13, 2003. The present patent application was filed on November 13, 2003. As the present patent application was filed before Polzin filed his utility patent application, the filing date of the Polzin utility patent application does not provide the critical date for a reference under 35 U.S.C. § 102(e). Thus, for Polzin to be a proper reference under 35 U.S.C. § 102(e), the Examiner is relying on the fact that the Polzin provisional patent application was filed before the filing date of the present patent application.

Under MPEP § 2136.03, section III, "[t]he 35 U.S.C. § 102(e) critical reference date of . . . U.S. application publications . . . entitled to the benefit of the filing date of a provisional application under 35 U.S.C. § 119(e) is the filing date of the provisional application with certain exceptions if the provisional application(s) properly supports the subject matter relied upon to make the rejection in compliance with 35 U.S.C. § 112, first paragraph" (emphasis in original, cross-referenced to MPEP § 706.02(f)(1)). This theme is repeated in MPEP § 201.11, section I.A: "for a nonprovisional application to be afforded the priority date of the provisional application, 'the specification of the provisional must "contain a written description of the invention and the manner and process of making and using it, in such full, clear, concise, and exact terms" to enable an ordinarily skilled artisan to practice the invention claimed in the nonprovisional application'" (emphasis in original, quoting New Railhead Mfg., LLC. v. Vermeer Mfg. Co., 298 F.3d 1290, 1294 (Fed. Cir. 2002) (quoting 35 U.S.C. § 112, ¶1)).

Accordingly, the rejections below will be referred to with reference to the provisional application of Polzin. If the Examiner relies on the disclosure of the published patent application

of Polzin, the Applicant respectfully requests that the Examiner cite to the section of the provisional patent application fully supporting the citation in compliance with 35 U.S.C. § 112, ¶1.

Claim Objections

The Examiner objected to claim 15. Claim 15 has been cancelled.

Claim Rejections – 35 USC § 103

Claims 1-9, 11-12, 14, 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polzin-P et al. (referring to the provisional application No. 60/470,078 as described above) and Boggs et al. (US 5,530,696).

Claim 1 recites "transmitting a synchronization signal on the at least one data lane responsive to the achieved transition density." In other words, whether a synchronization signal is transmitted depends on the achieved transition density. Claims 5 and 14 include similar elements.

The Examiner argued that Polzin taught that when more transitions are needed, the data on the bits are scrambled to achieve the additional transitions. However, the Examiner is misinterpreting Polzin.

In contrast, as supported by Polzin-P, Polzin is merely referring to the fact that scrambling or synchronization packets will be used because the transition density *could* fall below a minimum value, but the use of the scrambling or synchronization packets prevents such a low transition density.

For example, in Polzin-P, "Data is scrambled and de-scrambled using a PRBS..." See Polzin-P, p. 33. There is no indication that scrambling is turned on or off in this section. There is especially no indication that it is turned on or off in response to an achieved transition density.

Moreover, Polzin-P does indicate when the scrambling is turned on. Note that the enabling of scrambling has nothing to do with the achieved transition density. For example, Polzin-P described an eight step process to turn on scrambling. See Polzin-P, p. 25. To enable the scrambling, Polzin-P describes the following process:

1. A host sends a first sync pattern downstream.

2. When the last hub receives the first sync pattern, the last hub forwards the first sync pattern upstream to the host.

3. Intermediate hubs wait until the upstream and downstream receivers are locked to the first sync pattern.

4. After receiving the first sync pattern, the host sends a second sync pattern immediately followed by a NOP or BUSY signal. At this point scrambling is enabled so that the NOP or BUSY signal is scrambled.

5. Intermediate hubs initialize upstream receive scramblers in response to the second sync packet.

6. The last hub forwards the second sync pattern upstream and initializes upstream receive and transmit scramblers.

7. The intermediate hubs receive the second sync pattern going upstream and initialize their upstream receive and transmit scramblers.

8. The host receives the second sync pattern after the round-trip to and from the last hub, completing initialization.

The above sequence changes the scramblers from disabled to enabled, among other operations. There is no indication that this sequence is responsive to a transition density. In fact, Polzin-P *explicitly* states in step 6 that "From this point until reset, [the last hub] will terminate all traffic that comes downstream instead of forwarding it." In other words, unless there is a reset, the above sequence changing the scramblers from disabled to enabled *will never happen.*

Moreover, the above procedure and the Examiner's reasoning that the scrambling would be enabled as needed if the transition density is lacking leads to an irrational result. For example, if a reduced number of transitions is detected, the data transmission is halted so that the above sequence can be completed, ensuring that all hubs have the same scrambling state. One skilled in the art would not modify Polzin-P to interrupt the flow of data in such a manner.

Furthermore, Boggs focuses on a circuit to detect different transmission speeds. Boggs, Abstract. However, everything runs at the same speed in Polzin-P. All hubs in a chain must us the same transfer rate. Furthermore, the host hub enumerates the transfer rates of other hubs at an initial data rate of 400 MT/s. That is, when detecting the transfer speeds of the downstream

hubs, the host hub communicates at a known rate. See Polzin-P, p. 32, section 12.1. There is no need for the transfer speed detection circuitry of Boggs in Polzin-P.

In addition, as neither Polzin-P nor Boggs addresses switching on and off the scramblers or synchronization packets of Polzin-P, the Examiner is apparently arguing that such knowledge is common knowledge to one skilled in the art. Accordingly, the Applicant demands that the Examiner produce authority supporting the usage of common knowledge. See MPEP 2144.03 C. In particular, as described above, neither Polzin-P nor Boggs address switching scrambling on and off, and Polzin-P explicitly states that scrambling is turned on only after a reset.

Accordingly, Polzin-P and Boggs do not teach each and every element of claims 1, 5, and 14. The Applicant respectfully requests that the Examiner withdraw the rejection of claims 1, 5, 14, and dependent claims 2-4, 6-9, 11-12, and 25-26.

Claim 4 recites "transmitting a synchronization signal on all the data lanes if the achieved data transition density is less then the desired data transition density only on less than all of the data lanes." That is, if at least one, but not all of the data lanes has a transition density less than the desired level, a synchronization signal is transmitted on all of the data lanes, including a data lane having a transition density above the desired level.

As described above, Polzin-P only describes enabling scramblers in response to a reset, not in response to insufficient transition densities on less than all data lanes. The addition of Boggs does not cure the deficiencies of Polzin-P as Boggs does not address scrambling. Accordingly, the Applicant respectfully requests that the Examiner withdraw the rejection of claim 4.

Claims 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polzin and Boggs as applied to claims 8 and 11 respectively, and further in view of the applicant's admitted prior art (AAPA). The addition of AND gates and NAND gates from the AAPA does not cure the deficiencies of Polzin-P and Boggs described above. Accordingly, the Applicant respectfully requests that the Examiner withdraw the rejection of claims 10 and 13.

CONCLUSION

For the foregoing reasons, reconsideration and allowance of the pending claims of the application as amended is requested. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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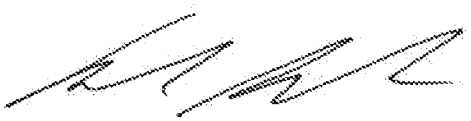

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